pieces like the collapse of a building with a weak foundation.

The teeth like the forests and rivers of the nation are one of our greatest natural resources and should be understood and conserved with equal care, as much of the health and happiness of the nation depends upon their usefulness. Their conservation is one of the simplest and easiest matters when faithfully continued from babyhood to adult life.

Then all fear of dental work is unknown because if as the result of an illness some small cavities do form they are filled before they become sensitive.

Where prophylatic work is practiced children not only lose all fear of the dentist but look forward to their monthly appointments as a pleasant form of entertainment. Prophylactic work being done once a month a constant supervision is kept of the oral hygiene practiced at home and any mistakes in the use, or lack of use, of the brush can be corrected.

Many pregnant women are allowed to suffer with their teeth when the dental work necessary for their relief would be far less injurious to the development of the child than the sleepless nights of pain which quickly sap a woman's strength.

The poisoning from abscessed teeth or pus pockets about the necks of the teeth very seriously hamper the proper development of the child, and such conditions have been instrumental in causing premature delivery.

Prophylactic work for women during pregnancy when begun in the earlier months is doing much to stop the rapid caries common during that time and prevent the incipient pyorrhea alveolaris to which later the mouth of the mother so often falls a victim.

If the fear and the pain of dentistry can be relegated to the past with other plagues and horrors another step upward will be taken in the progress of science and eugenics.

REPORT OF MASTOID CASES WITH SPECIAL REFERENCE TO DIAGNOSIS.

By J. M. STEPHENS, M. D., San Francisco.

We all meet with cases in which it is difficult to determine the advisability of an immediate operation. Also we have had patients recover without operation, though they showed many symptoms of a severe mastoiditis.

The two cases I wish to report are of interest mainly from the standpoint of age.

Case No. 1. Captain N., 69 years of age; occupation, sailor.

History: Three weeks prior to being seen had an attack of grippe. One week ago had pain in both ears, which increased in severity. A few days later the left ear began to discharge. Patient came to me April 23, 1909.

Physical examination: General condition poor. Patient pale and looked sick.

Ear examination: Left ear had profuse purulent discharge in canal. Membrana tympani: Perforation at lower segment with pus escaping. Mastoid: Tenderness fairly well marked over antrum and extending to the tip.

Right ear: Membrana tympani bulging in posterior superior quadrant. Mastoid tenderness over the antrum. Myringotomy was performed at this time with the escape of sero-purulent fluid. Deafness in both ears pronounced.

The patient was next seen May 19th, about three and a half weeks later, having been attended in the meantime by his general physician. Shortly after entering the hospital he had facial erysipelas, but at this time there was very little evidence of the rash.

Physical examination: Temperature 99.5° F. Pulse normal. The ears on examination presented very similar conditions: a profuse, thick, purulent discharge coming from the external meati and also from the perforations.

On the left side the membrana tympani was macerated, and there was some prolapse of the superior canal wall. Mastoid tenderness general, but not very acute. Patient could hear only a very loud spoken voice. An examination of aural smears from both sides showed streptococcus infection. Blood count showed a slight increase in the leukocytes, otherwise normal.

Two days later, May 21st, both mastoids were operated upon. On the left side the process was very extensively involved; bone pneumatic and all cells filled with pus and granulations. There was a peri-sinous abscess at knee, involving it for about one-half inch. Here the granulations were quite healthy in appearance, so they were left untouched. There was also an area of bone about three-fourths of an inch in diameter over the middle fossa which was found to be necrotic and removed, exposing the dura at this point. The dura appeared to be somewhat inflamed, though otherwise healthy. There was a thorough exenteration of all the cells done, and the wound packed with gauze.

The right side was also very extensively affected, all the cells being filled with pus and granulations. There was no exposure of dura except a small area of the limb of the sinus.

The patient's recovery was uneventful, hearing being practically normal.

Case No. 2. Mrs. W., 75 years of age; first seen April 18, 1908.

History: No previous ear trouble; general health good. Two weeks previous developed pain in left ear. Had been treated by general physician with ear drops and internal medication with no relief of pain.

Physical examination: Patient was unusually well preserved for one of her age. Membrana tympani grayish in color, bulging postero-superiorly; heard watch on contact. No mastoid tenderness elicited. A myringotomy was performed with the escape of a small amount of pus. Patient was sent home and put to bed. Patient was seen daily for one week, hot antiseptic douching of ear having been kept up during this period. The highest temperature recorded was 99° F. The discharge became very profuse and thick, still no mastoid tenderness. Pain in ear continued. Examination of aural smear showed short chained cocci. Blood examination showed no increase in leukocytes.

On May 1st, twelve days after first seeing patient, an operation was performed.

Operation: Usual T shaped incision made and bone exposed. About three-fourths of an inch posterior to the antrum there was a small perforation of the bony cortex, with a small amount of pus just beginning to escape. The cortex was generally removed, showing a large pneumatic process, with cells completely broken down and filled with pus. Post-sinous, tip, zygomatic and bulbar cells all filled with pus. The bone overlying a large part of the sinus was necrotic and very soft. After a thorough exenteration of all diseased cells, wound was packed with iodoform gauze. Recovery was uneventful except for an iodoform rash, which disappeared in four days.

One of the main points of interest in this case, especially after the operative findings, was the absence of mastoid tenderness. This was difficult to understand in a bone so extensively involved and especially with a cortical perforation.

The symptoms of mastoiditis are divided into general and local.

General: Elevation of temperature, headache, loss of appetite, etc.

Local: 1. Pain referred to the mastoid, sometimes radiating down the neck and to the ear.

2. Tenderness over the mastoid region.

3. Redness or edematous swelling.

4. Sagging of the posterior superior canal wall. Narrowing and congestion of the membranous canal.

5. Discharge from the middle ear.

6. Marked deafness.

7. Dullness on percussion is considered of importance by some.

Symptoms of cerebral irritation are considered as complications and will not be discussed; but occurring during the course of the infection, they are a strong indication for immediate operation.

Radiography of the mastoid has been advocated. While this may be of value in the chronic suppurations of the middle ear, it seems of no value in the acute infections, since it is not so much to determine if the mastoid process is involved as it is to decide whether or not the infection will subside without operative interference.

The increase in the polynuclear leukocytes is important when present. However, this is more frequently absent than otherwise. The importance of the specific micro-organism has been the occasion of much discussion, the streptococcus, pneumococcus, pneumo-bacillus and straphylococcus pyogenes being most important, or most frequently found. The streptococcus is probably the most virulent. The streptococcus capsulatus has been found to be quite insidious in its invasion and progress. The pneumococcus seems to be very rapid in its invasion, giving rise to acute symptoms: the mastoid tenderness is general and pain severe; the early discharge sero-sanguinious and profuse; yet this is a type of mastoiditis which very frequently subsides without operative interference.

The infective micro-organism is only one factor in the weighing of symptoms, yet frequently it is the deciding element which tips the scales.

Pain in the mastoid region is variable, frequently decreasing and at times disappearing in a progressive mastoiditis. Its importance is dependent on one's ability to eliminate the neuralgic element which is so often found in the course of a grippe infection.

Tenderness: This symptom is probably the most generally depended upon in determining an operative necessity, yet its importance is variable—as shown in one of the cases reported—with a great amount of bone destruction there was no mastoid tenderness, and there are numerous cases of this type. On the contrary, in a case recently seen, the mastoid tenderness was very acute and general, persisting for four days; but from this time on becoming less marked, with a subsidence of the other symptoms; complete recovery occurring in about seven days.

Redness with edematous swelling over the mastoid is usually a late symptom of the disease and demands prompt surgical attention.

Sagging of the posterior superior canal wall seems to be generally considered an absolute indication for operation. Unfortunately, though, it is frequently not advisable to wait for the appearance of this very important symptom.

Quantity and character of the aural discharge is a most valuable symptom; especially is this true of the discharge as it escapes from the perforation in the membrana tympani. A similar symptom is emphasized by Politzer; i. e., the pulsation of the discharge coming from the perforation. He believes if this symptom continues for two weeks, an operation is indicated.

Unfortunately, it is impossible to arrange a group of pathognomic symptoms for every case of mastoiditis; however, there are in the great majority of cases a sufficient number present to enable us to decide upon the proper procedure.

There are some specialists who seem quite radical in that they advocate an operation on practically every case of mastoiditis in which tenderness persists for three days; but this is only one of a group of symptoms, and its importance varies. There are others, so-called conservatives, who wait for symptoms which indicate an extension of the infection beyond the mastoid process, or until the bone is thoroughly broken down. This procedure not only endangers the patient's life, but jeopardizes a successful outcome of the operation.

The true conservative attitude is the intermediate; namely: in those cases where the patient is seen early in the disease it seems advisable to wait a reasonable number of days, even with a persistence of mastoid tenderness, provided the patient's general condition remains good. There is more occasion for prompt surgical attention in those cases seen after the middle ear infection has persisted for some days.

RATIONAL SURGERY OF RETRO-BULBAR NEOPLASMS, WITH REPORT OF A CASE OF CYLINDROMA OF THE ORBIT, EXTIRPATION OF SAME AND PRESERVATION OF THE EYE.*

By P. DE OBARRIO, M. D., San Francisco.

For purposes of description and as a guide of diagnostic value, it is well to divide the orbital cavity into four quadrants or sections and bear in mind the bones forming its boundaries as well as the soft structures contained therein.

In a general way, the upper quadrant or vault of the orbit presents a larger space for the growth and expansion of neoplasms; the external quadrant comes next as to capacity, then the inferior and finally the internal. The nine openings of the orbital pyramid serve as gateways or passages for the transmission of motor, sensory and trophic

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